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     (FILE 'HOME' ENTERED AT 14:21:21 ON 24 JUN 2003)

     INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,
     BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,
     CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,
     DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 14:22:14 ON
     24 JUN 2003
               SEA (SIALYLTRANSFERASE OR GALACTOSYLTRANSFERASE OR FUCOSYLTRANS
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                27   FILE ADISCTI
                 3   FILE ADISINSIGHT
                 2   FILE ADISNEWS
               593   FILE AGRICOLA
                79   FILE ANABSTR
                45   FILE AQUASCI
                88   FILE BIOBUSINESS
                40   FILE BIOCOMMERCE
              7016   FILE BIOSIS
               805   FILE BIOTECHABS
               805   FILE BIOTECHDS
              4404   FILE BIOTECHNO
              1352   FILE CABA
              1883   FILE CANCERLIT
              9063   FILE CAPLUS
               194   FILE CEABA-VTB
                17   FILE CEN
                28   FILE CIN
               297   FILE CONFSCI
                 6   FILE CROPU
               196   FILE DDFB
               113   FILE DDFU
              2771   FILE DGENE
               196   FILE DRUGB
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                68   FILE EMBAL
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              3230   FILE ESBIOBASE
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              5391   FILE GENBANK
               354   FILE IFIPAT
              3506   FILE JICST-EPLUS
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              6906   FILE MEDLINE
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                17   FILE NTIS
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                 9   FILE PHIN
                69   FILE PROMT
              6572   FILE SCISEARCH
              1967   FILE TOXCENTER
              1507   FILE USPATFULL
                35   FILE USPAT2
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                2    FILE VETB
                3    FILE VETU
              420    FILE WPIDS
              420    FILE WPINDEX
L1               QUE (SIALYLTRANSFERASE OR GALACTOSYLTRANSFERASE OR FUCOSYLTRANS
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     FILE 'CAPLUS, EMBASE, BIOSIS, MEDLINE, PASCAL, SCISEARCH, BIOTECHNO,
     JICST-EPLUS, ESBIOBASE, TOXCENTER, CANCERLIT, LIFESCI' ENTERED AT
     14:24:29 ON 24 JUN 2003
L2          1572 S L1 AND TRANSMEMBRANE
L3           227 S L2 AND (DELET? OR DEVOID OR REMOV?)
L4            76 DUP REM L3 (151 DUPLICATES REMOVED)
L5             1 S L4 AND ASPERGILLUS
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L4 ANSWER 74 OF 76 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 31

ACCESSION NUMBER: 1992:148892 CAPLUS
DOCUMENT NUMBER: 116:148892
TITLE: The signal for Golgi retention of bovine .beta.1,4-**galactosyltransferase** is in the **transmembrane** domain
AUTHOR(S): Teasdale, Rohan D.; D'Agostaro, Giacomo; Gleeson, Paul A.
CORPORATE SOURCE: Med. Sch., Monash Univ., Melbourne, 3181, Australia
SOURCE: Journal of Biological Chemistry (1992), 267(6), 4084-96
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The expression and localization of bovine .beta.1,4-**galactosyltransferase** (Gal T) was studied in mammalian cells transfected with Gal T cDNA constructs, and the role of N-terminal domains of Gal T in Golgi localization examd. Here it is demonstrated that the **transmembrane** (signal/anchor) domain of bovine Gal T contains a pos. Golgi retention signal. Bovine Gal T was characterized in transfected cells with antibovine Gal T antibodies, affinity-purified from a rabbit antiserum using a bacterial recombinant fusion protein. These affinity-purified antibodies recognized native bovine Gal T and showed min. cross-reactivity with Gal T from nonbovine sources. Bovine Gal T cDNA was expressed, as active enzyme, transiently in COS-1 cells and stably in murine L cells, and the product was shown to be localized to the Golgi complex by immunofluorescence using the polypeptide-specific antibodies. A low level of surface bovine Gal T was also detected in the transfected L cells by flow cytometry. The **removal** of 18 of the 24 amino acids from the cytoplasmic domain of bovine Gal T did not alter the Golgi localization of the product transiently expressed in COS-1 cells or stably expressed in L cells. Both the full-length bovine Gal T and the cytoplasmic domain **deletion** mutant were N-glycosylated in the transfected L cells, indicating both proteins have the correct Nin/Cout membrane orientation. **Deletion** of both the cytoplasmic and signal/anchor domains of bovine Gal T and incorporation of a cleavable signal sequence resulted in a truncated sol. bovine Gal T that was rapidly secreted (within 1 h) from transfected COS-1 cells. Replacement of the signal/anchor domain of bovine Gal T with the signal/anchor domain of the human transferrin receptor resulted in the transport of the hybrid mol. to the cell surface of transfected COS-1 cells. Furthermore, a hybrid construct contg. the signal/anchor domain of Gal T with ovalbumin was efficiently retained in the Golgi complex, whereas ovalbumin anchored to the membrane by the transferrin receptor signal/anchor was expressed at the cell surface of transfected COS-1 cells. Overall, these studies show that the hydrophobic, signal/anchor domain of Gal T is both necessary and sufficient for Golgi localization.

L4 ANSWER 68 OF 76 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1993:287208 BIOSIS
DOCUMENT NUMBER: PREV199345005333
TITLE: Study of the functional domains of beta-1-4 **galactosyltransferase** through the expression of the **deletion** constructs of cDNA in Escherichia coli and mammalian cells: Disulfide bond between CYS 134 and CYS 247 is required for folding and enzyme activity while the **transmembrane** domain is essential for stable expression in mammalian cells.
AUTHOR(S): Qasba, Pradman K.; Masibay, Arni S.; Boeggeman, Elizabeth E.; Balaji, Peety V.
CORPORATE SOURCE: Div. Cancer Inst., Natl. Inst. Health, Bethesda, MD 20892 USA
SOURCE: Protein Engineering, (1993) Vol. 6, No. SUPPL., pp. 99.
Meeting Info.: Winter Symposium on Advances in Gene Technology: Protein Engineering and Beyond Miami, Florida, USA 1993
ISSN: 0269-2139.
DOCUMENT TYPE: Conference
LANGUAGE: English

L4 ANSWER 64 OF 76 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 26
ACCESSION NUMBER: 1993:554766 CAPLUS
DOCUMENT NUMBER: 119:154766
TITLE: Mutational analysis of the Golgi retention signal of bovine .beta.-1,4-**galactosyltransferase**
AUTHOR(S): Masibay, Arni S.; Balaji, Petety V.; Boeggeman, Elizabeth E.; Qasba, Pradman K.
CORPORATE SOURCE: Lab. Math. Biol., Natl. Cancer Inst., Bethesda, MD, 20892, USA
SOURCE: Journal of Biological Chemistry (1993), 268(13), 9908-16
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To examine the role of the N-terminal region of the 402-residue-long acetylglucosamine .beta.-1,4-**galactosyltransferase** (.beta.-1,4-GT), a series of mutants and chimeric cDNA were constructed by polymerase chain reaction and transiently expressed in COS-7 cells, the enzyme activities were measured, and the protein was localized in the cells by subcellular fractionation or indirect immunofluorescence microscopy. It was shown earlier that the **deletion** of the N-terminal cytoplasmic tail and **transmembrane** domain from .beta.-1,4-GT abolishes the stable expression of this protein in mammalian cells. Further **deletion** analyses of the N-terminal region showed that the 1st 21 amino acids of .beta.-1,4-GT are not essential for the stable prodn. of the protein and are consistently localized in the Golgi app. In addn., anal. of hybrid constructs showed that residues 1-25 of .alpha.-1,3-**galactosyltransferase** can functionally replace the .beta.-1,4-GT N-terminal domain (residues 1-43). This fusion protein also showed Golgi localization. On the other hand, the .alpha.-2,6-**sialyltransferase**/.beta.-1,4-GT fusion protein (.alpha.-2,6-ST/.beta.-1,4-GT) needed addnl. C-terminal sequences flanking the **transmembrane** domain of the .alpha.-2,6-ST for stability and Golgi localization. Substitution of Arg-24, Leu-25, Leu-26, and His-33 of the .beta.-1,4-GT **transmembrane** by Ile (pLFM) or substitution of Tyr by Ile at positions 40 and 41 coupled with the insertion of 4 Ile residues at position 43 (pLB) released the mutant proteins from the Golgi and was detected on the cell surface. The results showed that (1) the **transmembrane** domains of .beta.-1,4-GT, .alpha.-1,3-**galactosyltransferase**, and .alpha.-2,6-ST, along with its stem region, all play a role in Golgi targeting and participate in a common mechanism that allows the protein to be processed properly and not be degraded in vivo; (2) increasing the length of the **transmembrane** domain overrides the Golgi retention signal and directs the enzyme to the plasma membrane; and (3) the length of the hydrophobic region of the **transmembrane** domain of .beta.-1,4-GT is an important parameter but is not sufficient by itself for Golgi retention.

L4 ANSWER 61 OF 76 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 24
ACCESSION NUMBER: 1994:526296 CAPLUS
DOCUMENT NUMBER: 121:126296
TITLE: Expression of soluble active human .beta.1,4-**galactosyltransferase** in Saccharomyces cerevisiae
AUTHOR(S): Kleene, Ralf; Krezdorn, Christian H.; Watzele, Gabriele; Meyhack, Bernd; Herrmann, Guido F.; Wandrey, Christian; Berger, Eric G.
CORPORATE SOURCE: Physiol. Inst., Univ. Zurich, Zurich, CH-8057, Switz.
SOURCE: Biochemical and Biophysical Research Communications (1994), 201(1), 160-7
CODEN: BBRCA9; ISSN: 0006-291X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Sequences coding for the cytoplasmic and **transmembrane** domains were **removed** from the cDNA of the human Golgi resident membrane protein .beta.1,4 **galactosyltransferase** (galT). The remaining sequences coding for the stem and catalytic domains of this **glycosyltransferase** were fused to sequences coding for the yeast invertase signal sequence. The hybrid was inserted together with a constitutive yeast promoter and a terminator into an Escherichia coli/yeast shuttle vector. Saccharomyces cerevisiae strain BT150 transformed with this new expression vector expressed enzymically active sol. enzyme, whereas no activity was detectable in mock-transformed yeasts. The enzyme product was identified by HPLC anal. and shown to correspond to the expected product N-acetyllactosamine.